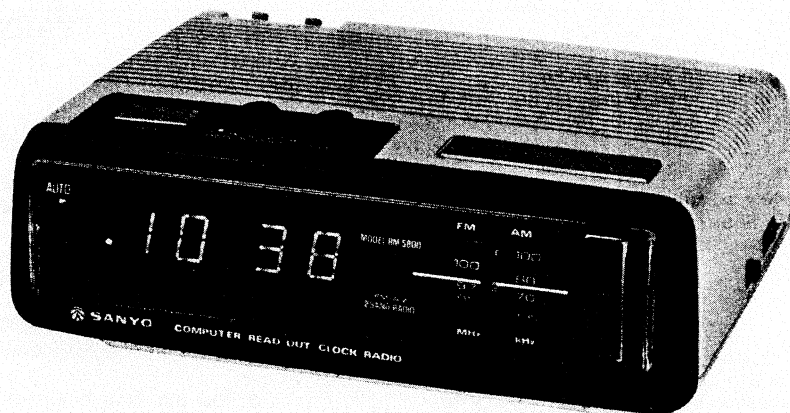




SANYO

SANYO AM/FM DIGITAL CLOCK RADIO RM 5800_{SS/AUS} SERVICE MANUAL



A PRODUCT OF SANYO ELECTRIC CO., LTD.

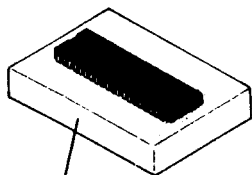
HANDLING & REPAIR OF LSI's

CAUTION

The large-scale integrated circuit (LSI) incorporates in its small size highly sophisticated circuitry. It must be handled with utmost care to protect it against destruction because it works on a very weak current and is highly sensitive to static electricity.

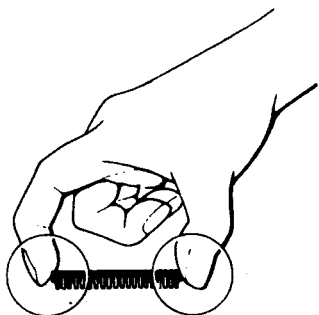
A. STORAGE AND HANDLING

1. Each LSI should be kept on an electrically conductive urethane foam sheet until immediately before use. (The urethane foam sheet has the effect of keeping terminal potentials at the identical level.)



Conductive urethane foam sheet

2. Hold the LSI as illustrated with the thumb and forefinger, paying attention not to touch any of the terminals.



Do not touch terminals

3. The LSI should be kept in a cool, dry place. Strong magnetism is also detrimental.

B. REPAIR

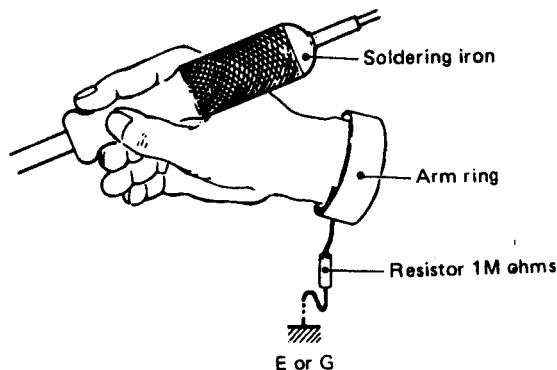
1. Please be sure to unplug the power cord before setting or taking off an LSI. Do not forget to ground the B-lines (at the three specified spots).

Do the same when replacing the printed circuit board.

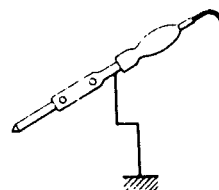
- Three parts to be grounded: (at both ends of) electrolytic capacitors C7, C8 and C712.

2. Be sure to connect a grounding conductor to every instrument and tool to be employed. (Either at E or G) The engineer who does the repair work should have a grounding conductor attached to his body (he should wear an arm ring connected to a grounding line having a resistance value of 1M ohms)

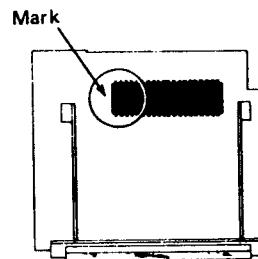
Before handling an LSI, he should touch the B-line and discharge into the earth static electricity charged in his body.



3. AC leakage from the soldering iron being employed should be prevented. It must be less than 1V when the iron is hot. Be sure to ground it before use.



4. Install the LSI's at their proper places. Erroneously placed LSI's will be destroyed, entirely or partially, if power is switched on. Replace them to prevent mechanical trouble.



C. MISCELLANEOUS

1. Refrain from applying high voltage to the "touch snoze".
2. Do not wipe an LSI with a dry cloth. (If necessary, use a cloth impregnated with antistatic agent.)
3. A tester can be used for measuring voltage and amperage. It should not be used for measuring resistance.

D. HANDLING OF P.C.B. ASSEMBLY

1. Place a conductive urethane foam sheet on the repair desk.
2. Do not take it out of an electrically conductive bag until immediately before use.
3. Do not touch the patterned surface of the PCB with hand.

If you can not get an arm ring and a conductive urethane foam sheet in your stateside, please order to the following address:

SANYO ELECTRIC TRADING CO., LTD.

33, Hiyoshi-cho 2-chome, Moriguchi-shi,
Osaka-fu, 570 Japan

SPECIFICATIONS

Frequency Ranges: AM 530 – 1605 kHz (RM5800SS)
AM 510 – 1605 kHz (RM5800AUS)
FM 88 – 108 MHz (RM5800SS)
FM 87.5 – 108 MHz (RM5800AUS)

Intermediates Frequency: AM 455 kHz
FM 10.7 MHz

Sensitivity
(for 50 mW output): AM 150 μ V/m
FM 10 μ V (S/N = 30 dB)

Power Output: Maximum 400mW
Undistorted 300mW
Power Source: 120/200/240V 50/60 Hz (RM5800SS)
240V 50 Hz (RM5800AUS)
Speaker: 7.7cm Permanent Dynamic Speaker 8 ohm
Dimensions: 240mm(W) x 82mm(H) x 158mm(D)
Weight
(without batteries): 980g (approx.)

MARKET IDENTIFICATION BY MODEL NUMBER SUFFIX

RM5800 SS: Model for General market
RM5800 AUS: Model for AUSTRALIA market

ALIGNMENT PROCEDURES

GENERAL ALIGNMENT CONDITIONS

1. The position of volume control is at maximum position.
2. Signal input must be kept as low as possible to avoid overload.
3. Use an output meter of the highest possible sensitivity.
4. Standard modulation is 400 Hz at 30% amplitude (for AM) and 22.5 kHz deviation (for FM).

AM BAND – Band selector switch in AM position.

Step	Connection of Signal Generator	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Loop Antenna	455 kHz	Lowest End	Across Speaker	IFT T306, 307, 308	Adjust for maximum
2	Same	505 kHz	Lowest End	Same	Osc. Coil L105	Same
3	Same	1650 kHz	Highest End	Same	Osc. Trim VCT4	Same
4	Same	600 kHz	600 kHz	Same	Ant. Coil L104	Same
5	Same	1400 kHz	1400 kHz	Same	Ant. Trim. VCT3	Same
Repeat steps 2 thru 5 to obtain maximum sensitivity.						

FM BAND – Band selector switch in FM position

Step	Connection of Signal Gen.	Input Signal Frequency	Dial Setting of Radio	Connection of Meter or Oscilloscope	Adjust	Remarks
1	Connect Sweep Marker Generator to VC(H) VC(E)	10.7 MHz	Lowest end	Connect scope input cable thru network to TP3, Shield Plate	IFT T301,302 T303, & T304	Adjust for maximum sensitivity with symmetrical curve.
2	Same	10.7 MHz	Lowest End	Connect scope input cable thru network to R317, Shield Plate	IFT T305	Adjust for symmetrical "S" curve.
3	Connect Signal Generator to TP1, 2	87.0 MHz	Lowest End	Connect V.T.V.M. across speaker	Osc. Coil L103	Adjust for maximum
4	Same	109.0 MHz	Highest End	Same	Osc. Trimmer VCT2 & CT101	Same
5	Same	90 MHz	90 MHz	Same	RF Coil L101	Same
6	Same	106 MHz	106 MHz	Same	RF Trimmer VCT1	Same
Repeat steps 3 thru 6 to obtain maximum sensitivity.						

PARTS LIST

Part No.	Description	Q'ty
PACKING		
141-6-411T-83302	Instruction Book (RM5800SS)	1
141-6-411T-83303	Instruction Book (RM5800 AUS)	1
141-6-141T-09402	Individual Carton (RM5800SS)	1
141-6-141T-09403	Individual Carton (RM5800 AUS)	1
141-6-144T-32300	Pad	1
141-6-144T-32400	Pad	1
	Polyethylene Bag, 350x400mm, Set	1
	Polyethylene Bag, 60x250mm, Power Cord	1
141-6-478T-10900	Sticker, "Electric LED Clock Radio"	1
147-6-472T-05603	Caution Label, Power (RM5800SS only)	1

CABINET & CHASSIS		
11-0-124T-145910	Top Lid Assembly	1
11-2-125T-09002	Bottom Lid (RM5800SS)	1
141-0-125T-09091	Bottom Lid Assembly (RM5800 AUS)	1
141-2-461T-26300	Pipe, Bottom Lid mtg.	1
141-0-122T-01500	Front Panel Assembly	1
	Cushion, 19φx4mm, Speaker	1
141-0-538T-037912	Drum Assembly	1
141-2-363T-04200	Bracket Capacitor	1
141-2-163T-26400	Rotary Knob, TUNING	1
11-2-163T-26500	Rotary Knob, VOLUME	1
	Eyelet, 2φx4mm, Volume	1
141-2-386T-00800	Bracket Clock	1
141-2-161T-32500	Push Button, ALARM OFF	1
141-2-161T-32400	Push Button, DISPLAY MODE/SLEEP	2
141-6-476T-06400	Indication Label, Fuse (RM5800 AUS only)	1

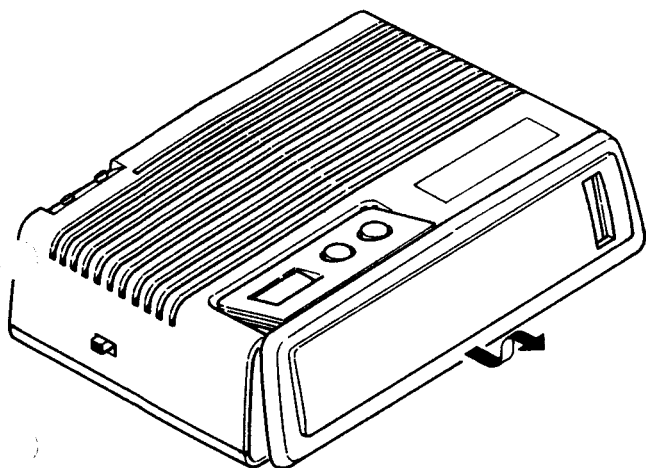
Schematic Location	Part No.	Description	Q'ty
SEMICONDUCTORS			
Q101,301		Transistor, 2SC930	2
Q102,103,302		Transistor, 2SC930	3
Q701		Transistor, 2SA608	1
Q702		Transistor, 2SC536	1
Q703		Transistor, 2SB598	1
Q704		Transistor, 2SD545	1
D101,301		Diode, 1N60FM	2
D102,304		Diode, 1S188AM	2
D103,701,702		Diode, CDG24S	3
D302,303		Diode, 1S188FM-1	2
J1		L.S.I. MM5385N	1
Q1		Transistor, 2SC536	1
Q2,5		Transistor, 2SC1328	2
Q3,4		Transistor, 2SC945	2
		L.E.D. LAC2406P, Time Display	1
D1,2,4,5		Diode, DS19	4
D3		Diode, 10D-1 or 1N4002	1
D6,7,9,13		Diode, 1S2473	4
D8,12		Diode, 1S2472	2
D10,11		Diode, 1S188AM	2

Schematic Location	Part No.	Description	Q'ty
COIL & TRANSFORMER			
L101	4-265R-01310	VHF Coil, 3½	1
L102	4-265R-05000	VHF Coil, 6½	1
L103	4-265T-02610	VHF Coil, 3½	1
L104	4-257T-09002	Antenna Coil, AM	1
L105	4-258R-25811	Oscillator Coil	1
T301	4-256R-20811	IF Transformer, FM	1
T302,303	4-256R-19511	IF Transformer, FM	2
T304	4-256R-15111	IF Transformer, FM	1
T305	4-256R-02311	IF Transformer, FM	1
T306	4-256R-00111	IF Transformer, AM	1
T307	4-256R-17211	IF Transformer, AM	1
T308	4-256R-00211	IF Transformer, AM	1
T701	4-251T-54500	Power Transformer, 120/200/240V (RM5800SS)	1
	4-251T-54510	Power Transformer, 240V (RM5800 AUS)	1
	4-251T-54700		
	4-251T-54710		

ELECTRICAL PARTS (RADIO)			
CF101	4-253T-08700	RF Filter, FM	1
B101	123-2-471R-10400	Bead Core	1
	141-2-322T-25900	Shield Plate	1
	4-151T-11000	Speaker, 77mm, 8 ohm	1
S1	4-231T-42100	Slide Switch, BAND	1
S2	4-231T-37600	Switch, 120/200/240V (RM5800SS)	1
	4-235R-14000	Socket, Earphone	1
	4-243T-77372	Power Cord (RM5800SS)	1
	4-243T-12200	Power Cord (RM5800 AUS)	1
	141-2-382T-02000	Terminal, Power Cord (RM5800SS)	1
	141-2-382T-02000	Terminal, Power Cord (RM5800 AUS)	2
	4-237T-00100	Terminal, Lapping	6
	141-2-646T-08700	Fixer, Lead mtg.	1
	4-226T-979912	P.C.B. Assembly (RM5800SS)	1
	4-226T-979913	P.C.B. Assembly (RM5800 AUS)	1

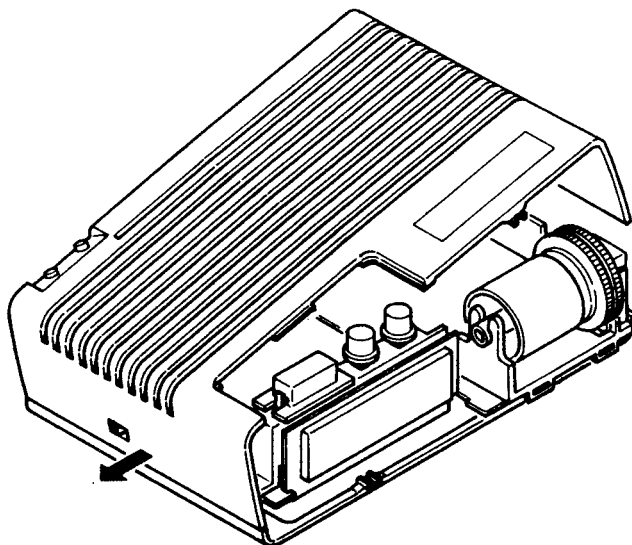
ELECTRICAL PARTS (CLOCK)			
S1	4-231T-50800	Slide Switch, FUNCTION	1
S5	4-231T-50871	Push Switch, DISPLAY MODE/SLEEP	1
	4-235T-34600	Socket, FAST/SLOW/Vss/Snooze	4
	4-237T-00100	Terminal, Lapping	19
	4-237T-00100	Terminal, Lapping (RM5800SS)	1
	123-2-472R-00400	Lug	2
S2	4-231R-14500	Slide Switch, 50/60Hz (RM5800SS)	1
	4-234T-01100	Fuse, 315mA, Radio/LED (RM5800 AUS)	2
	4-234T-04000	Fuse, 200mA, Clock (RM5800 AUS)	1
	141-2-383T-03500	Fuse Holder (RM5800 AUS)	1
	4-226T-978911	P.C.B. Assembly (RM5800SS)	1
	4-226T-978912	P.C.B. Assembly (RM5800 AUS)	1

(a) Detachment for front panel



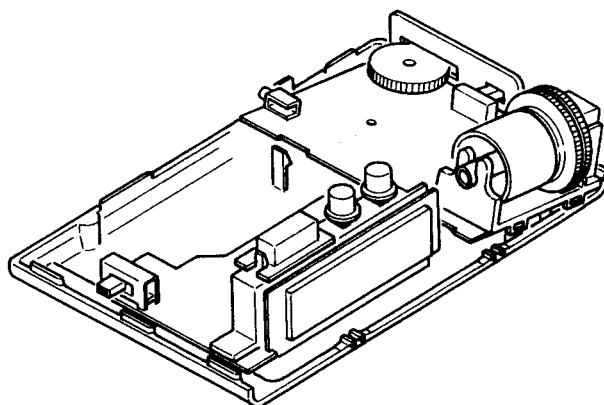
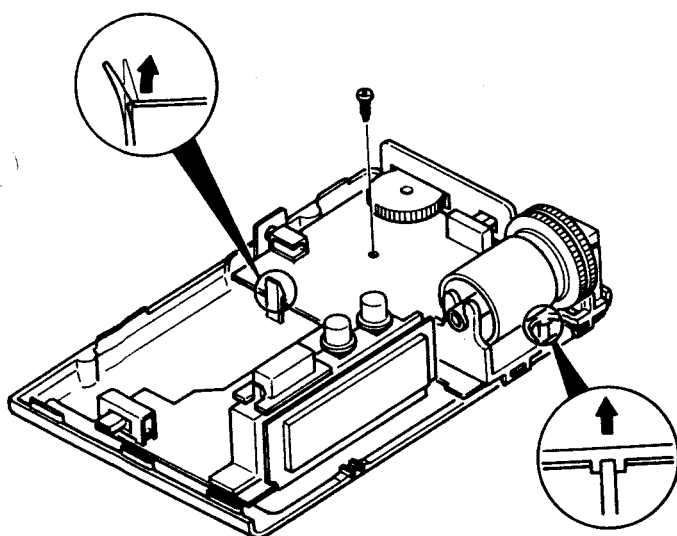
(b) Detachment of top lid

- (1) Be careful not to damage the lefthand controls when removing the top lid.



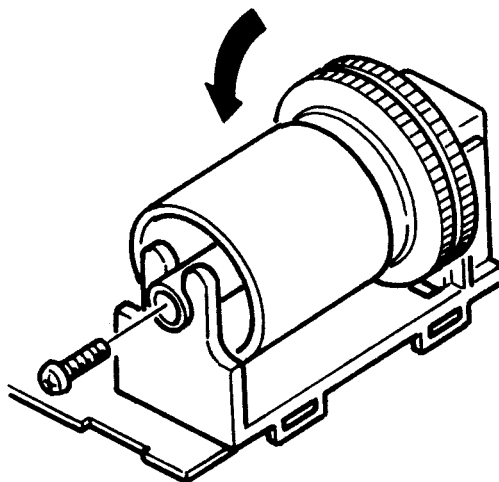
(c) Removal of printed circuit board (radio section)

- (1) To detach the printed circuit board from the two supports at the front part of the bottom lid, lift it while holding it at the front edge.

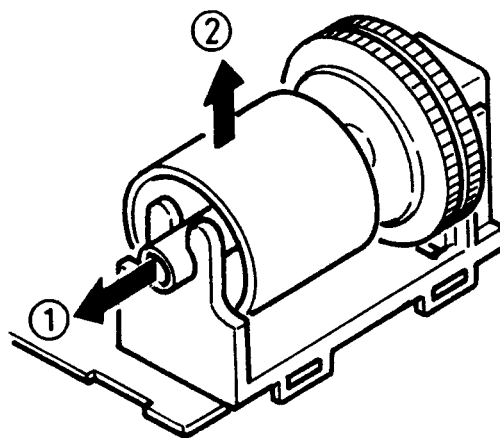


(d) Detachment of dial drum

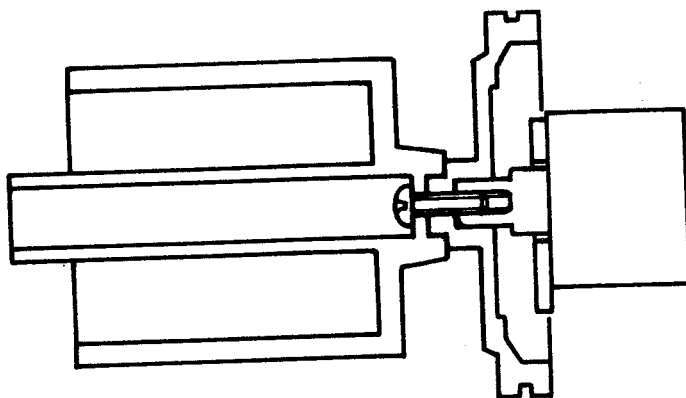
(1) Remove the screw from the drum.



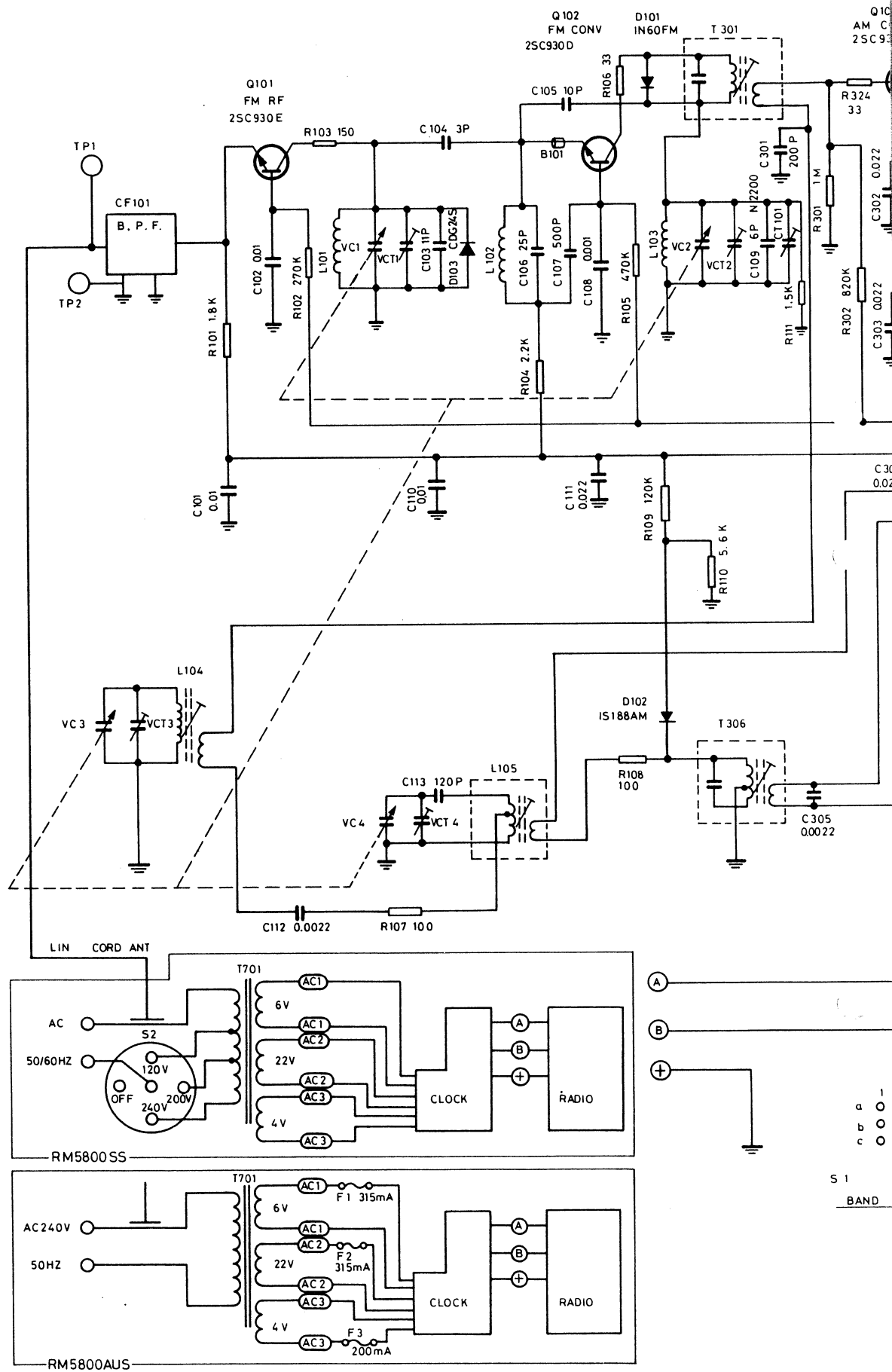
(2) Lift the drum, holding it at the left end.

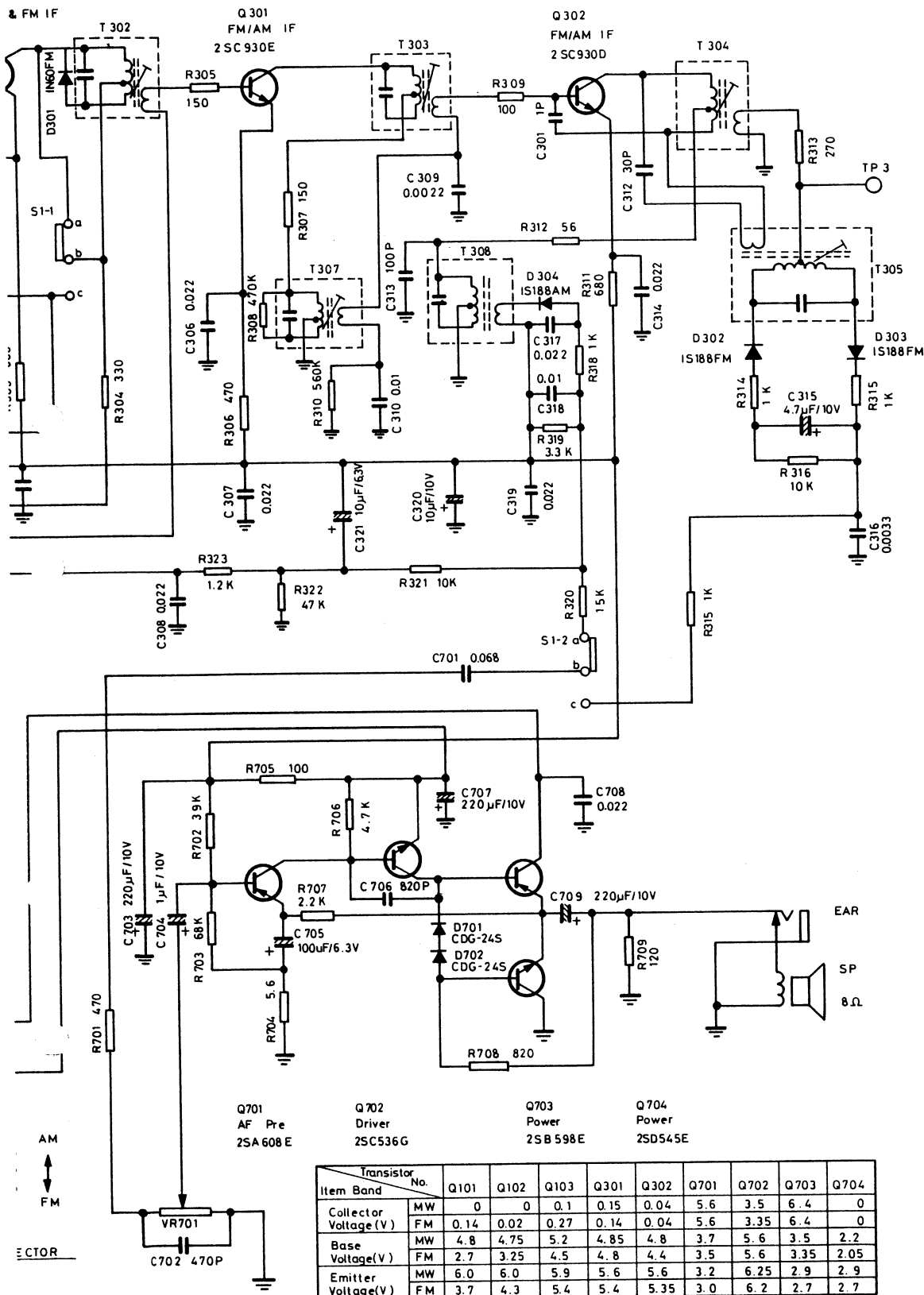


(3) Internal design of the dial drum

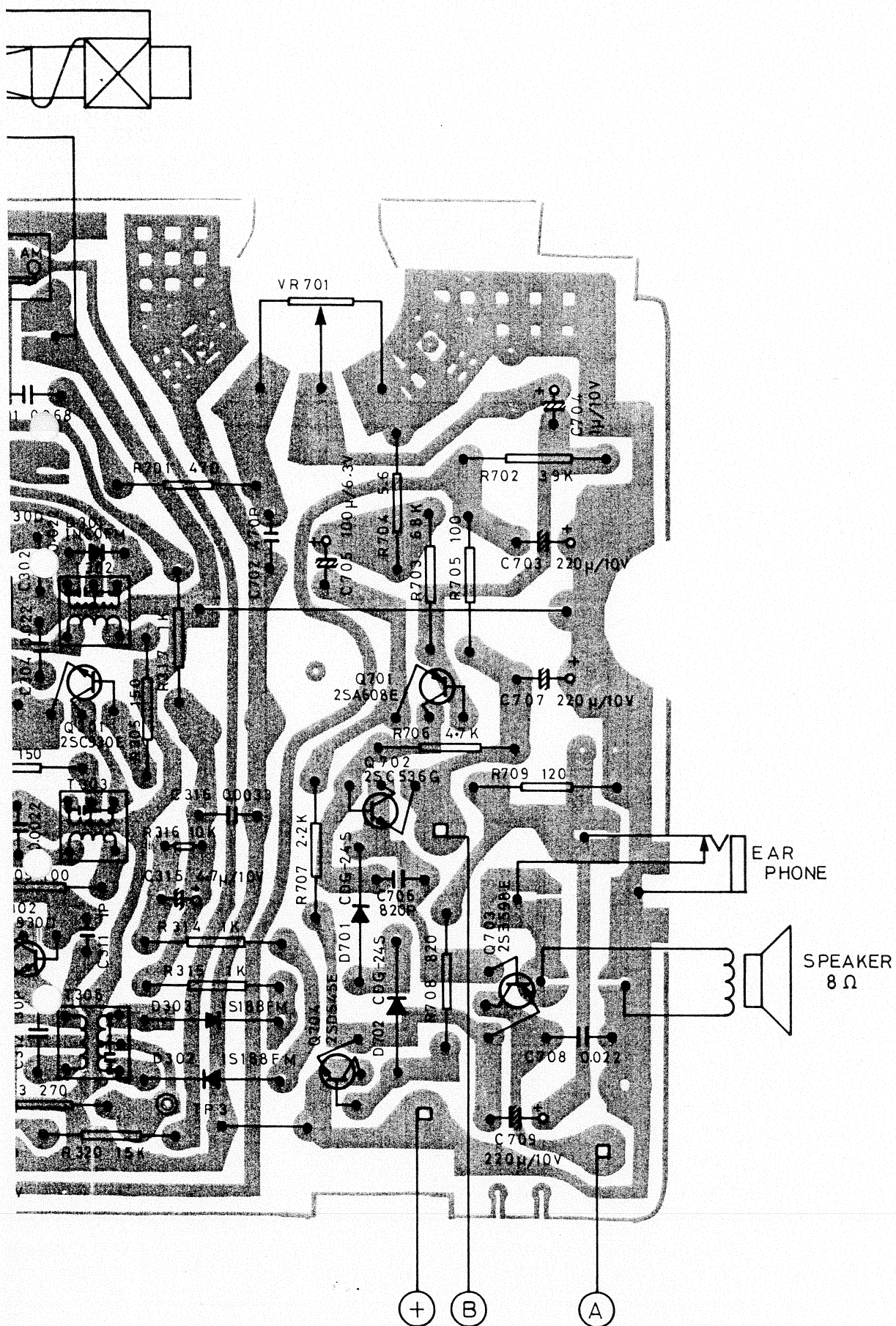


SCHEMATIC DIAGRAM (RADIO)

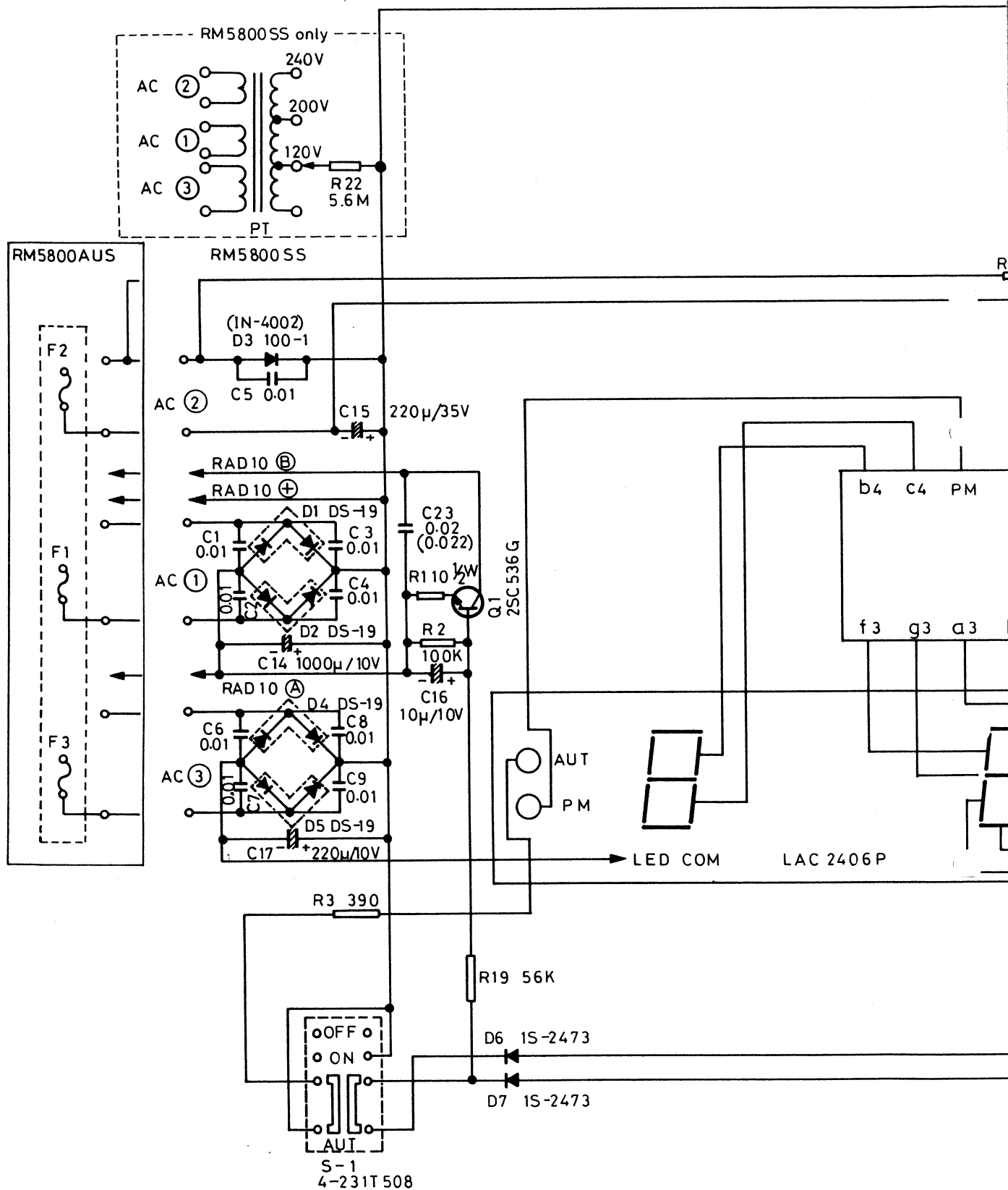


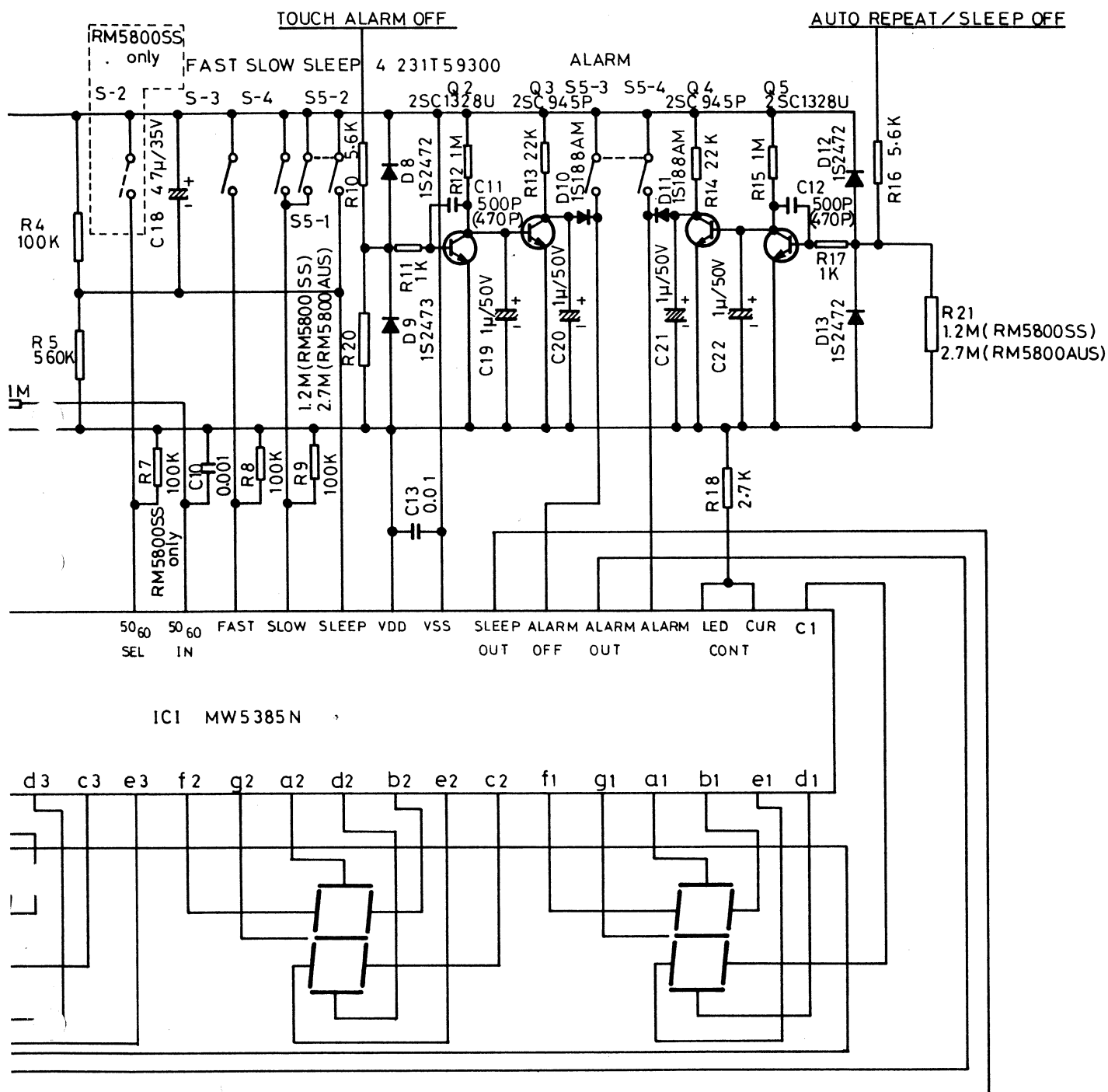






SCHEMATIC DIAGRAM (CLOCK)



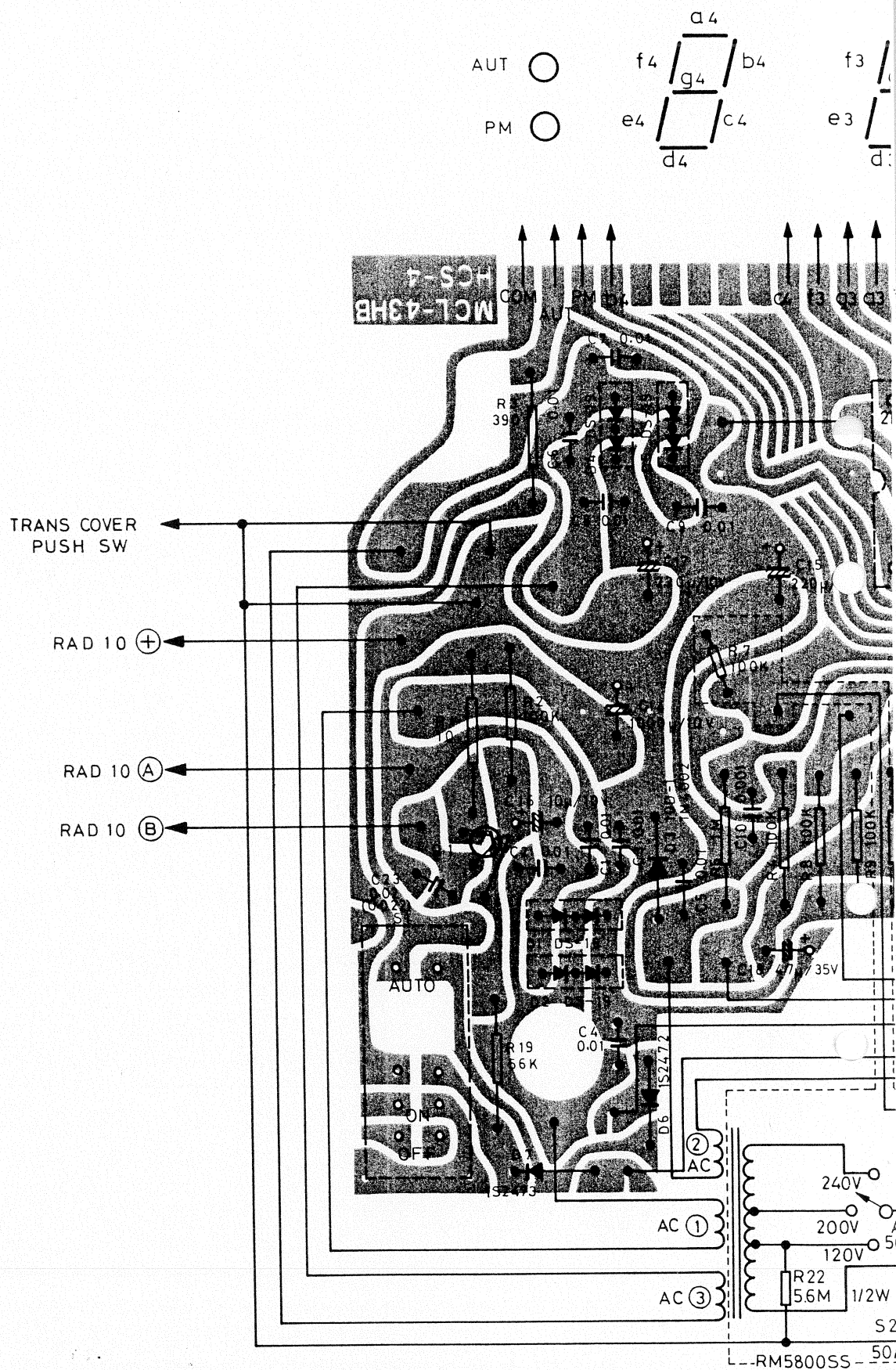


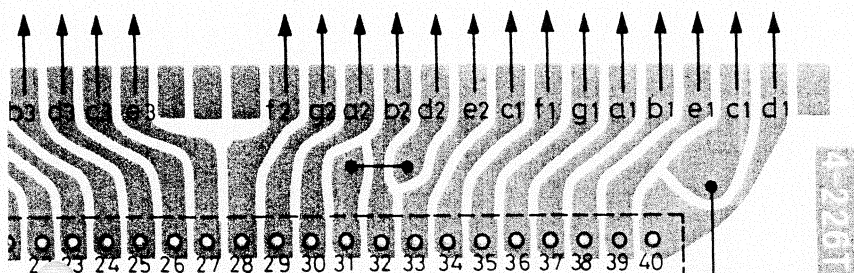
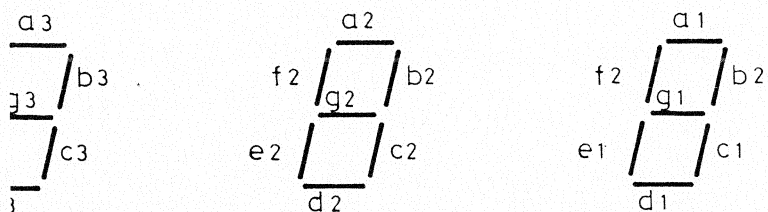
Transistor		No.		
Item	Band	Q1	Q2.5	Q3.4
Collector Voltage (V)	ON	-6.6	-21.5	-21.5
	OFF	0	-21	0
Base Voltage (V)	ON	-6.0		-21
	OFF	-8.0	-21.5	-21.5
Emitter Voltage (V)	ON	-6.8	-21.5	-21.5
	OFF	-8.0	-21.5	-21.5

NOTES: 1. All voltage are measured from common positive (+) ground.

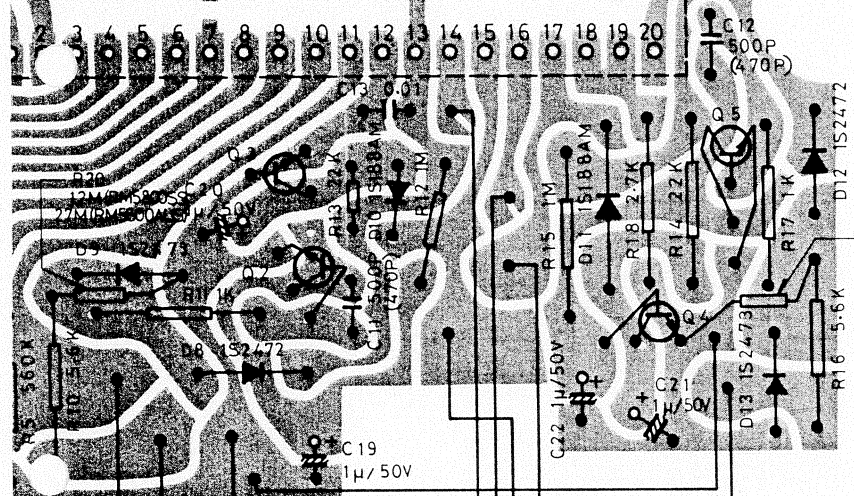
2. Volume control is at the minimum position.

WIRING DIAGRAM (CLOCK)





IC-1 MM5385



(Q1 2SC536G
Q2 Q5 2SC1328U
Q3 Q4 2SC945P

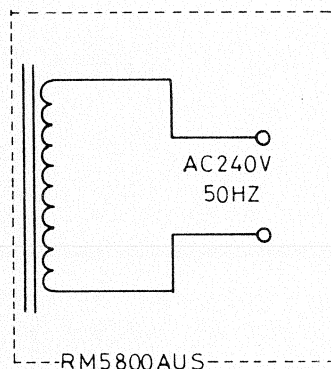
R21
12M(RM5800SS)
27M(RM5800AUS)

TOUCH
ALARM OFF

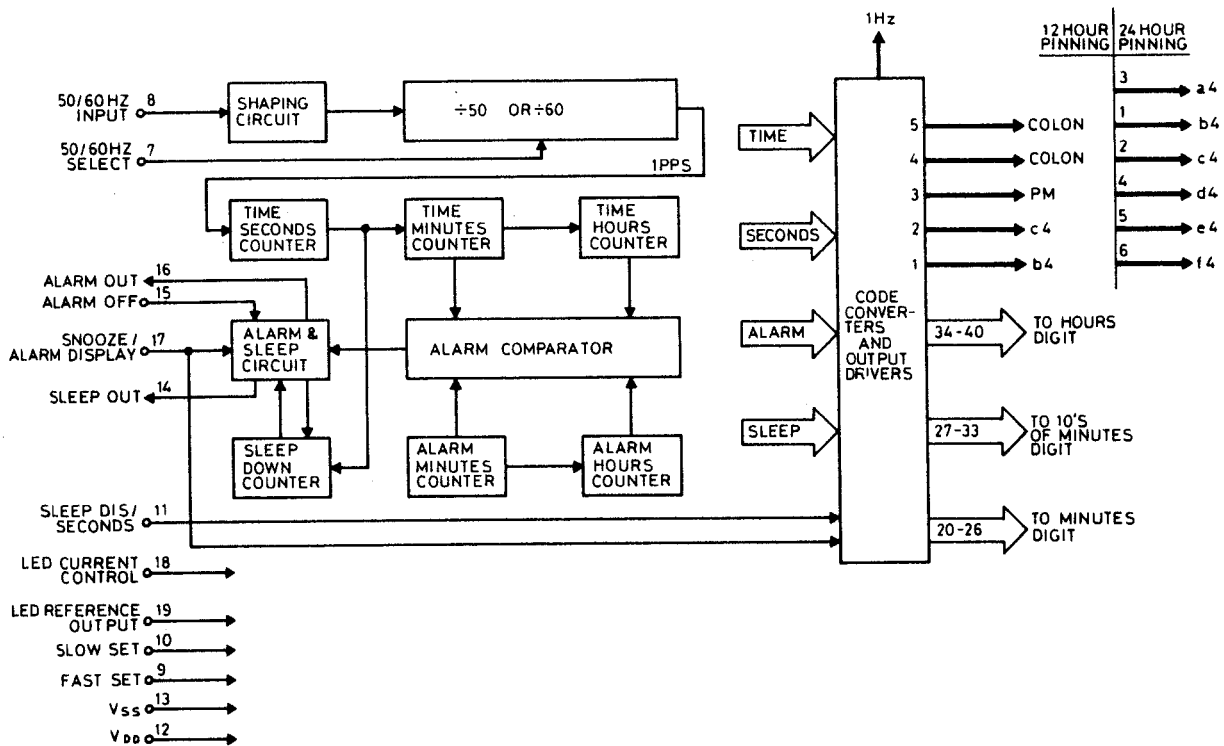
AUTO REPEAT/ SLEEP OFF

AC
60HZ/60HZ

60 SEL S4 S3 S5-2 S5-1 S5-3 S5-4
SLOW FAST SLEEP ALARM



IC 1(MM 5385N) BLOCK DIAGRAM _____



CONNECTION DIAGRAM_____

